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(54) Title: SPECIAL EFFECT PAINT SET

(57) Abstract: The invention relates to a special effect paint set and its use. The set contains water-based paint components for forming a water-based paint at the point of sale, distribution or application and includes at least a binder paint component. The set further includes a thickener paint component and at least one special effect paint component containing a special effect pigment.

**Special effect paint set**

The present invention relates to a set of mutually compatible water-based paint components for forming a water-based paint at the point of sale or at the distribution center, which set includes at least a binder paint component.

This set of water-based paint components is especially intended to be dispensed by a dispensing machine, producing in this way paints having different characteristics in terms of quality, performance, aesthetical and visual results. The invention also relates to a component in a set of water-based components for forming a water-based paint, the set including at least a binder paint component and a thickener paint component. Further, the invention relates to a process for forming a water-based paint by providing a set of compatible water-based paint components including at least a binder paint component and a thickener paint component and contacting at least two of the water-based paint components.

In the component mixing method, presented by Carola Grundfelt-Forsius in 1997 (Färg och Lack, 1997, 43, 5, 6), the previously used base paints (usually only two) are divided into further components, which are responsible for gloss, weather resistance or colour depth. See also WO 01/60931 A2, which calls the paint components prepaints.

Special effect paints are known to give visual effects differing from the properties of standard paints. Typical effects are the "pearlescent" effect, giving the film mother-of-pearl appearance, the metal effect, giving metal reflection through the film, the iridescent effect, giving different colours depending on the visual angle, the textural effect, revealing a coarse pattern through or on the film, and velvet effect, giving a smooth velvet appearance.

Traditionally, to get e.g. a pearlescent effect on the wall, it has been necessary to apply first a coat of paint having the right absorption degree, and then apply upon that the pearlescent pigment paint. To get the final result was thus exceptionally complicated and costly for the retailer, who had to keep in stock every specific combination of basecoat paint and special effect surface paint.

Now, the problem resulting from using a separate basecoat and a special effect surface paint has essentially been solved by means of a set of compatible water-based paint components for forming a water-based paint at the point of sale,

distribution or application, which set includes at least a binder paint component. Characteristic for the set is that it further includes a thickener paint component and at least one special effect paint component containing a special effect pigment. By applying the above component system in this way to special effect paints, the disadvantage of retailing a large stock of basecoat and surface paints has been removed.

The present set of water-based paints is especially intended to be dispensed by a dispensing machine, producing in this way special effect paints directly at the point of sale and distribution. The water-based paint formed by the claimed set is preferably a decorative architectural paint.

By "pigment" is in the present invention meant any finely divided, insoluble powder which imparts special properties to the paint, e.g. colour, including black and white, smoothness, hardness, roughness, optical effect, etc.

The special effect pigment can be of any kind, such as a pearlescent pigment, a metallic pigment, an iridescent pigment, a texture pigment, and a velvet touch giving pigment. Preferably, the special effect paint component contains, most preferably consists essentially of, from 10 to 50% by weight of said special effect pigment, from 1.0 to 10% by weight of a suspending agent selected from a thickening agent and an anti-settling agent, and from 40 to 70% by weight of water. This composition ensures the stability of the component, which otherwise would be difficult to attain with the comparably high concentration of special effect pigment.

The special effect paint component preferably contains less than 1 % by weight, most preferably less than 0.5 % by weight, of binder. The special effect paint component, and preferably also the binder and thickener paint components, preferably contains less than 5 % by weight, most preferably less than 1 % by weight, of organic solvent.

Most preferably, the special effect paint component contains from 1.0 to 3.0% by weight of said thickening agent and from 0.5 to 3.0% by weight of said anti-settling agent.

In addition to the special effect pigment, the suspending agent(s) and the water, the special effect paint component may also contain other ingredients. Such ingredients are e.g. smaller amounts of binders, opacifying agents and pigment extenders, defoaming agents, coalescents, plasticizers, wetting agents, non-thickening rheology modifiers, driers, anti-skinning agents, surfactants (including

dispersants) and biocides (including mildewcides). Preferably, the special effect paint contains one or more ingredients selected from of from 1.0 to 3.0% by weight of a wetting agent, from 0.1 to 1.5% by weight of a defoaming agent, from 0.1 to 1.0% by weight of a biocide.

When the special effect pigment is selected from the group consisting of said pearlescent pigment, said metallic pigment, said iridescent pigment, and said texture pigment, the special effect paint component preferably contains from 1.0 to 3.0% by weight of a dispersant. When the special effect pigment is selected from the group consisting of said pearlescent pigment, said iridescent pigment, said texture pigment, and a said velvet touch giving pigment, the claimed special effect paint component preferably contains from 0.05 to 0.5% by weight of a pH regulating agent.

Further, when the special effect pigment is selected from the group consisting of said pearlescent pigment, said metallic pigment and said iridescent pigment, the special effect paint component preferably contains from 20 to 40% by weight of the special effect pigment. If the special effect pigment is selected from the group consisting of said texture pigment and said velvet touch giving pigment, the special effect paint component preferably contains a little less, i.e. from 10 to 30% by weight, of the special effect pigment.

The pearlescent pigment may be any pearlescent pigment known in the art. Preferably it consists essentially of particles of titanium dioxide coated mica. The metallic pigment may also be any metallic pigment known in the art. Preferably, it consists essentially of stainless steel flakes or aluminium particles.

The texture pigment may consist of any solid material giving raise to a textured appearance. Preferably it consists essentially of coarse size filler, e.g. quartz and calcium carbonate. The particle size of the coarse particles may e.g. be 100 to 300 µm.

The velvet touch pigment preferably consist essentially of extremely light filler, e.g. glass bubbles or microspheres having e.g. a bulk density of 30 to 50 kg/m$^3$ and a particle diameter of 20 to 80 µm.

As was said above, the effect paint component may contain a pigment suspending agent selected from a thickening agent and an anti-settling agent.

It is preferred to select the thickening agent of said special effect paint component from the group consisting of a polyvinyl alcohol, a hydrophobically modified alkali soluble (HASE) emulsion, an alkali soluble or swellable emulsion (ASE) emulsion, a modified ethylene oxide-urethane polymer (HEUR), and a cellulose ether based thickener. Most preferably, the thickening agent is selected from the group consisting of said hydrophobically modified alkali soluble (HASE) emulsion, said alkali soluble or swellable emulsion (ASE) emulsion, said modified ethylene oxide-urethane polymer (HEUR), and said cellulose ether based thickener.

The anti-settling agent of said special effect paint component is preferably selected from the group consisting of fumed silica, attapulgite clay, synthetic colloidal clay, and titanate chelating agents. Most preferably, the anti-settling agent is synthetic colloidal clay.

As was stated above, the claimed set of compatible water-based paint components for forming a water-based paint includes at least a binder paint component, a thickener paint component and the above described special effect paint component.

According to a preferred embodiment of the invention, the binder paint component of the claimed set contains from 80 to 99% by weight of a binder and 20 to 1% by weight of water. Naturally, it may also contain other substances, such as pH regulating agents, biocides, etc.

According to a preferred embodiment of the invention, the binder paint component of the claimed set contains from 0.05 to 0.5% by weight of a pH regulating agent, preferably selected from ammonium compounds and amino compounds such as amino alcohols.

The binder of the binder paint component may be a latex (a stable, fine dispersion of synthetic polymer in water), a thermoplastic polymer or a thermosetting polymer. Most typically it is a latex polymeric binder selected from the group consisting of acrylic homo- and copolymers, styrene-butadiene copolymers, and vinyl acetate homo- and copolymers. Such polymers are e.g. the polymers of acrylic and methacrylic acid and their esters (the acrylic polymers), styrene-acrylic copolymers, polyvinyl acetate, the styrene-butadiene copolymers and their derivatives, vinyl acetate-acrylic copolymers, ethylene-vinyl acetate copolymers, vinyl acetate-maleate copolymers, vinyl acetate-vinyl chloride-acrylic terpolymers, ethylene-vinyl acetate-acrylic terpolymers and urethane polymers. Most preferably, the binder

polymer used in the binder paint component of the invention is a styrene-acrylic copolymer.

In the claimed set, the thickener paint component preferably contains from 5 to 20% by weight of a thickening agent and from 95 to 80% by weight of water. The thickener agent is a material which modifies the rheological profile of the final water-based paint. Suitable thickening agents are hydrophobically modified alkali soluble emulsions (HASE), alkali soluble or swellable emulsions (ASE), polyvinyl alcohol (PVA), modified ethylene oxide-urethane polymers (HEUR), hydroxymethyl cellulose (HMC), hydroxyethyl cellulose (HEC), hydrophobically modified hydroxy-ethyl cellulose (HMHEC), sodium carboxymethyl cellulose (SCMC), sodium carboxymethyl-2-hydroxyethyl cellulose, and the 2-hydroxy-$C_2$-$C_4$-alkyl celluloses. Preferably the thickening agent is selected from the group consisting of HASE, ASE, HEUR and said cellulose ether thickeners.

Further the claimed set of compatible water-based paint components may include one or several gloss-regulating paint components. Typically the gloss-regulating paint component is used in different quantities to give the final water-based paint the right gloss, such as high gloss, semi gloss, semi matt, and matt. According to one embodiment of the invention, the gloss regulating paint component is a matt component. The matt component preferably contains a mixture of different type of fillers which make the film of the paint matt. According to another embodiment of the invention, the gloss regulating paint component is a non-matt component. Then, the non-matt component preferably contains kaolin particles, which make the film of the paint satin-like or glossy. Most preferably, the set includes both a matt and non-matt component by which any gloss of the paint can be achieved.

In some cases, e.g. when textured and velvet paints are to be prepared, the claimed set may include an opacifying paint component. Typically, such an opacifying paint component contains an opacifying pigment and water. Other typical components are dispersant(s) and thickener(s). The opacifying pigment is for instance selected from the group consisting of titanium dioxide, zinc dioxide, lead oxide and a synthetic polymer pigment. Preferably, the opacifying pigment is titanium oxide or a mixture thereof.

Naturally, the set may also include paint components or pastes containing normal pigments such as colour pigments.

In addition to the above described set of mutually compatible water-based paint components for forming a water-based paint, the invention also relates to a component in such a set. Characteristic of the invention is that the component is a special effect paint component containing a special effect pigment. Typically, the special effect pigment is selected from the group consisting of a pearlescent pigment, a metallic pigment, an iridescent pigment, a texture pigment, and a velvet touch giving pigment.

The special effect paint component typically contains from 10 to 50% by weight of said special effect pigment, from 1.0 to 10% by weight of a pigment suspending agent selected from the group consisting of a thickening agent and an anti-settling agent, and from 40 to 70% by weight of water. It preferably contains from 1.0 to 3.0% by weight of said thickening agent and from 0.5 to 3.0% by weight of said anti-settling agent. The rest of the properties of the special effect paint component according to the invention are described above.

Finally, the invention relates to a process for forming a water-based paint by providing a set of compatible water-based paint components including at least a binder paint component and a thickener paint component and contacting at least two of the water-based paint components. In the process, at least one special effect paint component containing a special effect pigment is provided and contacted. The special effect pigment is preferably selected from the group consisting of a pearlescent pigment, a metallic pigment, an iridescent pigment, a texture pigment, and a velvet pigment.

Typically, the special effect paint component contains from 10 to 50% by weight of said special effect pigment, from 1.0 to 10% by weight of a pigment suspending agent selected from a thickening agent and an anti-settling agent, and from 40 to 70% by weight of water. Preferably, the special effect paint component contains from 1.0 to 3.0% by weight of said thickening agent and from 0.5 to 3.0% by weight of said anti-settling agent. The special effect paint component may also contain one or more agents selected from of from 1.0 to 3.0% by weight of a wetting agent, from 0.1 to 1.5% by weight of a defoaming agent, and from 0.1 to 1.0% by weight of a biocide.

The rest of the technical features of the special effect paint component are given above in connection with the description of the set of compatible water-based paint components. Also, the binder paint component and the thickener paint component,

as well as the optional gloss regulating component and opacifying component are described above in connection with said set.

When preparing a water-based paint according to the invention, it is preferred that from 5 to 50% by weight, based on the total weight of the water-based paint, of said binder paint component is contacted. 5 to 40% by weight, based on the total weight of the water-based paint, of said thickener paint component is preferably contacted.

When the special effect pigment is selected from the group consisting of said pearlescent pigment, said metallic pigment, and said texture pigment, from 10 to 50% by weight, based on the total weight of the water-based paint, of said gloss regulating paint component is preferably contacted. Then, an amount of additional water (in addition to the water in the paint components) is preferably contacted which is from 1 to 20% by weight of the final paint. The pearlescent and metal pigments usually require the use of a non-matt paint component. This component is usually based on kaolin, see above, which gives the final paint a satin-like or glossy appearance. However, the amount of kaolin must not be such as to cover the pearlescent or metal effect.

When the special effect pigment is selected from the group consisting of said texture pigment and said velvet pigment, from 5 to 20% by weight of said opacifying paint component is preferably contacted. In the following, a few examples are presented, the mere purpose of which are to illustrate the instant invention.

Finally, the invention relates to the use of the above described set or special effect component for the preparation of a water based paint at the point of sale, distribution or application. Preferably, the water based paint is a decorative architectural paint.

## Examples

### Available materials

The tested system is composed by 5 "standard" components plus water.

1. MC: matt component containing a mix of different fillers. It assures the matt nature of the paints.

2. NMC: not matt component. This ingredient, kaolin based, doesn't decrease the gloss, allowing us to get satin and gloss paints.
3. WP: white component, containing titanium dioxide.
4. Binder: a styrol-acrylic one, suitable for both matt and gloss formulation.
5. TS: thickening solution. A mix of different thickening agents (cellulose based, acrylic and polyurethane).

Special components can be added to the mentioned above ones, components containing special pigments or very specific fillers, assuring to the paints particular aspects.

The special effect paints components prepared were:

**Pearlescent – Iridescent component**

| | | |
|---|---|---|
| Water | 46.1000 | 40-50 |
| Anti-settling agent | 1.0000 | 0.5-1.5 |
| Thickening agent | 2.0000 | 1.5-2.5 |
| pH modulator | 0.1000 | 0.1-0.2 |
| Defoamer | 0.4500 | 0.1-0.5 |
| Wetting agent | 1.0000 | 0.5-1.5 |
| Dispersant | 2.0000 | 1.5-2.5 |
| Special Effect Pigment | 30.0000 | 20-40 |
| Water | 16.7000 | 10-20 |
| Biocide | 0.2000 | 0.1-0.3 |
| Defoamer | 0.4500 | 0.1-0.5 |

**Metallic Pigment Component**

| | | |
|---|---|---|
| Water | 46.1000 | 40-50 |
| Anti-settling agent | 1.0000 | 0.5-1.5 |
| Thickening agent | 2.0000 | 1.5-2.5 |
| Defoamer | 0.4500 | 0.1-0.5 |
| Wetting agent | 1.0000 | 0.5-1.5 |
| Dispersant | 2.0000 | 1.5-2.5 |
| Metal paste | 30.0000 | 20-40 |
| Water | 16.7000 | 10-20 |
| Biocide | 0.2000 | 0.1-0.3 |
| Defoamer | 0.4500 | 0.1-0.5 |

**Textured Component**

| | | |
|---|---|---|
| Water | 44.0500 | 40-50 |
| Anti-settling agent | 1.5000 | 0.5-1.5 |
| Thickening agent | 2.5000 | 1.5-2.5 |
| pH modulator | 0.2500 | 0.1-0.2 |

| | | |
|---|---|---|
| Dispersant | 2.0000 | 1.5-2.5 |
| Wetting agent | 2.0000 | 1.5-2.5 |
| Defoamer | 0.2500 | 0.1-0.5 |
| Coarse size filler | 20.0000 | 10-30 |
| Water | 27.0000 | 20-30 |
| Defoamer | 0.2500 | 0.1-0.5 |
| Biocide | 0.2000 | 0.1-0.3 |

**Velvet Touch Component**

| | | |
|---|---|---|
| Water | 46.10 | 40-50 |
| Anti-settling agent | 1.00 | 0.5-1.5 |
| Thickening agent | 2.00 | 1.5-2.5 |
| pH modulator | 0.10 | 0.1-0.2 |
| Wetting agent | 2.00 | 1.5-2.5 |
| Defoamer | 0.25 | 0.1-0.5 |
| Light filler | 15.00 | 10-30 |
| Water | 15.00 | 10-30 |
| Defoamer | 0.50 | 0.1-0.5 |
| Biocide | 0.20 | 0.1-0.3 |

All these components have showed to be stable.

**Preparation of the final paint**

When preparing final paints from these special paints, it is necessary to understand that these special pigments can very easily loose their specific light reflection by the presence, in the same formula, of common filler (calcium carbonate, Blanc fixxe, talcum; titanium dioxide) can cover the final effect as well. Of course, this depends on the amount of these fillers, but usually to get a good result it is necessary to work with a much-reduced amount of "solid" in the recipe. In other words it is necessary to avoid some other ingredients that can hide the special pigments.

The essential point in this formulation is the ratio between the component NMC (not matt component) and the components containing the special pigments. NMC is based on kaolin, a filler that can precerve the gloss in the final formulation. It is used as an extender for $TiO_2$.

Finding the right ratio you can have some solid content in the final paint (that helps to get an even application) without disturbing the "shiny" nature of the pigment.

Another point is of course the thickening component (TS). This is made by mixing thickening agents providing different features. And so we have a polyurethane one

to improve the levelling, an acrylic one to enhance the film thickness and a cellulosic one to help the stability in can.

No compatibility problems were found between all the components included in our system. The following recipes gave good results:

**Pearlescent Paint formula (w/w):** tintable to get the desired shades

| | |
|---|---|
| NMC | 15 |
| Pearl component | 25 |
| Binder | 20 |
| TS | 30 |
| Water | 10 |

**Metal Paint formula (w/w)**

| | |
|---|---|
| NMC | 20 |
| Metal component | 20 |
| Binder | 20 |
| TS | 30 |
| Water | 10 |

**Textured Paint formula (w/w):** tintable to get the desired shades

| | |
|---|---|
| MC | 40 |
| Textured component | 20 |
| WP | 15 |
| Binder | 10 |
| TS | 10 |
| Water | 5 |

**Velvet Touch Paint formula (w/w):** tintable to get the desired shades

| | |
|---|---|
| Light Filler component | 45 |
| WP | 10 |
| Binder | 35 |
| TS | 10 |

Using the components already developed we got an excellent formulation, suitable to be applied by roller with an homogenous result, preserving the final specific appearance coming from the special pigments.

## Claims

1. A set of compatible water-based paint components for forming a water-based paint at the point of sale, distribution or application, the set including at least a binder paint component, **characterized** in that the set further includes a thickener paint component and at least one special effect paint component consisting essentially of from 10 to 50% by weight of a special effect pigment, from 1.0 to 10% by weight of a pigment suspending agent selected from a thickening agent and an anti-settling agent, and from 40 to 70% by weight of water.

2. A set according to claim 1, **characterized** in that said water-based paint is a decorative architectural paint.

3. A set according to claim 1 or 2, **characterized** in that said special effect pigment is selected from the group consisting of a pearlescent pigment, a metallic pigment, an iridescent pigment, a texture pigment, and a velvet pigment.

4. A set according to claim 1, 2 or 3, **characterized** in that said special effect paint component contains less than 1 % by weight, preferably less than 0.5% by weight, of binder.

5. A set according to any one of the preceding claims, **characterized** in that said special effect paint component, and preferably also the binder and thickener paint components, contain less than 5 % by weight, preferably less than 1 % by weight, of organic solvent.

6. A set according to any one of the preceding claims, **characterized** in that said special effect paint component contains from 1.0 to 3.0% by weight of said thickening agent and from 0.5 to 3.0% by weight of said anti-settling agent.

7. A set according to any one of the preceding claims, **characterized** in that said special effect paint component also contains one or more agents selected from of from 1.0 to 3.0% by weight of a wetting agent, from 0.1 to 1.5% by weight of a defoaming agent, from 0.1 to 1.0% by weight of a biocide.

8. The set according to any one of claims 1 to 7, **characterized** in that said special effect pigment is selected from the group consisting of said pearlescent pigment, said metallic pigment, said iridescent pigment, and said texture pigment, and that said special effect paint component contains from 1.0 to 3.0% by weight of a dispersant.

9. The set according to any one of claims 1 to 7, **characterized** in that said special effect pigment is selected from the group consisting of said pearlescent pigment, said iridescent pigment, said texture pigment, and a said velvet pigment, and that said special effect paint component contains from 0.05 to 0.5% by weight of a pH regulating agent.

10. The set according to any one of claims 1 to 7, **characterized** in that said special effect pigment is selected from the group consisting of said pearlescent pigment, said metallic pigment and said iridescent pigment, and that said special effect paint component contains from 20 to 40% by weight of the special effect pigment.

11. The set according to any one of claims 1 to 7, **characterized** in that said special effect pigment is selected from the group consisting of said texture pigment and said velvet pigment, and that said special effect paint component contains from 10 to 30% by weight of the special effect pigment.

12. The set according to any one of claims 1 to 10, **characterized** in that said pearlescent pigment consists essentially of particles of titanium dioxide coated mica.

13. The set according to any one of claims 1 to 8 and 10, **characterized** in that said metallic pigment consists essentially of stainless steel flakes.

14. The set according to any one of claims 1-9 and 11, **characterized** in that said texture pigment consists essentially of coarse size filler particles.

15. The set according to claim 14, **characterized** in that said coarse size filler particles have a size of 100-300 µm.

16. The set according to any one of claims 1 to 7, 9 and 11, **characterized** in that said velvet pigment consist essentially of extremely light filler particles.

17. The set according to claim 16, **characterized** in that said extremely light filler particles have a bulk density of 30-50 kg/m$^3$ and a particle diameter of 20 to 80 µm.

18. The set according to any one of claims 1 to 17, **characterized** in that the thickening agent of said special effect paint component is selected from the group consisting of a polyvinyl alcohol, a hydrophobically modified alkali soluble (HASE) emulsion, an alkali soluble or swellable emulsion (ASE) emulsion, a modified ethylene oxide-urethane polymer (HEUR), and a cellulose ether based thickener.

19. The set according to claim 18, **characterized** in that said thickening agent is selected from the group consisting of said hydrophobically modified alkali soluble (HASE) emulsion, said alkali soluble or swellable emulsion (ASE) emulsion, said modified ethylene oxide-urethane polymer (HEUR), and said cellulose ether based thickener.

20. The set according to any of claims 1 to 19, **characterized** in that the anti-settling agent of said special effect paint component is selected from the group consisting of fumed silica, attapulgite clay, synthetic colloidal clay, and titanate chelating agents.

21. The set according to claim 20, **characterized** in that said anti-settling agent is synthetic colloidal clay.

22. The set according to any one of claims 1 to 21, **characterized** in that the thickener paint component of said set contains from 5 to 20% by weight of a thickening agent and from 95 to 80% by weight of water.

23. The set according to claim 22, **characterized** in that said thickening agent is selected from the group consisting of a polyvinyl alcohol, a hydrophobically modified alkali soluble (HASE) emulsion, an alkali soluble or swellable emulsion (ASE) emulsion, a modified ethylene oxide-urethane polymer (HEUR), and a cellulose ether based thickener.

24. The set according to claim 23, **characterized** in that said thickening agent is selected from the group consisting of said hydrophobically modified alkali soluble (HASE) emulsion, said alkali soluble or swellable emulsion (ASE) emulsion, said modified ethylene oxide-urethane polymer (HEUR), and said cellulose ether based thickener.

25. The set according to any one of claims 1 to 24, **characterized** in that said binder paint component of said set contains from 80 to 99% by weight of a binder and 20 to 1% by weight of water.

26. The set according to claim 25, **characterized** in that said binder is selected from the group consisting of water-born latex polymers.

27. The set according to claim 26, **characterized** in that said water-born latex polymers are selected from the group consisting of acrylic homo- and copolymers, styrene-butadiene copolymers, and vinyl acetate homo- and copolymers.

28. The set according to claim 27, **characterized** in that said water-born latex polymer is a styrene-acrylic copolymer.

29. The set according to any one of claims 1 to 28, **characterized** in that said binder paint component contains from 0.05 to 0.5% by weight of a pH regulating agent selected from ammonium and amino compounds, preferably from amino alcohols.

30. The set according to any one of claims 1 to 29, **characterized** in that it includes one or several gloss regulating paint components.

31. The set according to claim 30, **characterized** in that one gloss regulating paint component is a matt component.

32. The set according to claim 31, **characterized** in that the matt component contains a mixture of different type of fillers which make the film of the paint matt.

33. The set according to claim 30, **characterized** in that one gloss regulating paint component is a non-matt component.

34. The set according to claim 33, **characterized** in that the non-matt component contains kaolin particles, which make the film of the paint satin-like or glossy.

35. The set according to any one of claims 1-34, **characterized** in that it includes an opacifying paint component, which contains an opacifying pigment and water.

36. The set according to claim 35, **characterized** in that said opacifying pigment is selected from the group consisting of titanium dioxide, zinc dioxide, lead oxide and a synthetic polymer pigment.

37. The set according to claim 36, **characterized** in that said opacifying pigment is titanium oxide or a mixture thereof.

38. The special effect paint component containing a special effect pigment in a set according to any one of the preceding claims.

39. Process for forming a water-based paint by providing a set according to any one of claims 1 to 38 and contacting at least two of the set's water-based paint components at the point of sale, distribution or application, **characterized** by providing and contacting said thickener paint component and said at least one special effect paint component containing a special effect pigment.

40. Process according to claim 39, **characterized** in that said water-based paint components are dispensed by a dispensing machine.

41. The process according to claim 39 or 40, **characterized** in that from 5 to 50% by weight, based on the total weight of the water-based paint, of said binder paint component is contacted.

42. The process according to 39, 40 or 41, **characterized** in that from 5 to 40% by weight, based on the total weight of the water-based paint, of said thickener paint component is contacted.

43. The process according to any one of claims 39 to 42, **characterized** in that said special effect pigment is selected from the group consisting of said pearlescent pigment, said metallic pigment, and said texture pigment, and that from 10 to 50% by weight, based on the total weight of the water-based paint, of said gloss regulating paint component is contacted.

44. The process according to claim 43, **characterized** in that from 1 to 20% by weight of water is separately contacted.

45. The process according to 39, 40 or 41, **characterized** in that said special effect pigment is selected from the group consisting of said texture pigment and said velvet pigment and that from 5 to 20% by weight of said opacifying paint component is contacted.

46. Use of the set according to any one of claims 1 to 37, or the special effect component according to claim 38, for the preparation of a water based paint at the point of sale, distribution or application.

47. Use according to claim 46, **characterized** in that the water based paint is a decorative architectural paint.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/FI2005/000502

A. CLASSIFICATION OF SUBJECT MATTER

See extra sheet

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC8: C09D, C09B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

FI, DK, NO, SE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X | US 5672649 A (BROCK THOMAS et al.) 30 September 1997 (30.09.1997), column 1, line 57 - column 2, line 36; column 3, line 56 - column 4, line 13; column 7, line 34 - column 8, line 26, examples 2 and 3 | 1-47 |
| X | US 5897698 A (BELLAS THOMAS M) 27 April 1999 (27.04.1999), column 3, line 55 - column 4, line 9; column 5, line 33 - column 6, line 41; claims 1, 33 - 39 | 1-47 |
| X | US 6676742 B2 (GILLI ALBERTO) 13 January 2004 (13.01.2004), column 1, lines 24-62; column 5, line 45 - column 6, line 8; example 5, claims 11, 14, and 15 | 1-47 |

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

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"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
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**INTERNATIONAL SEARCH REPORT**
**Information on patent family members**

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*C09D 5/02* (2006.01)